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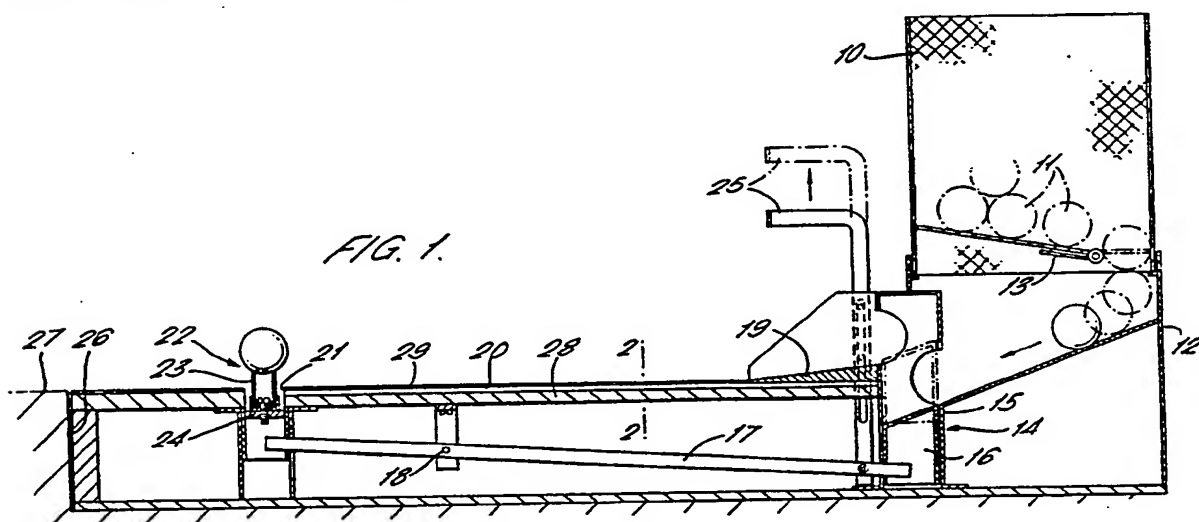
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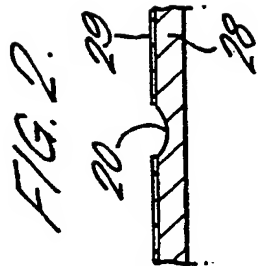
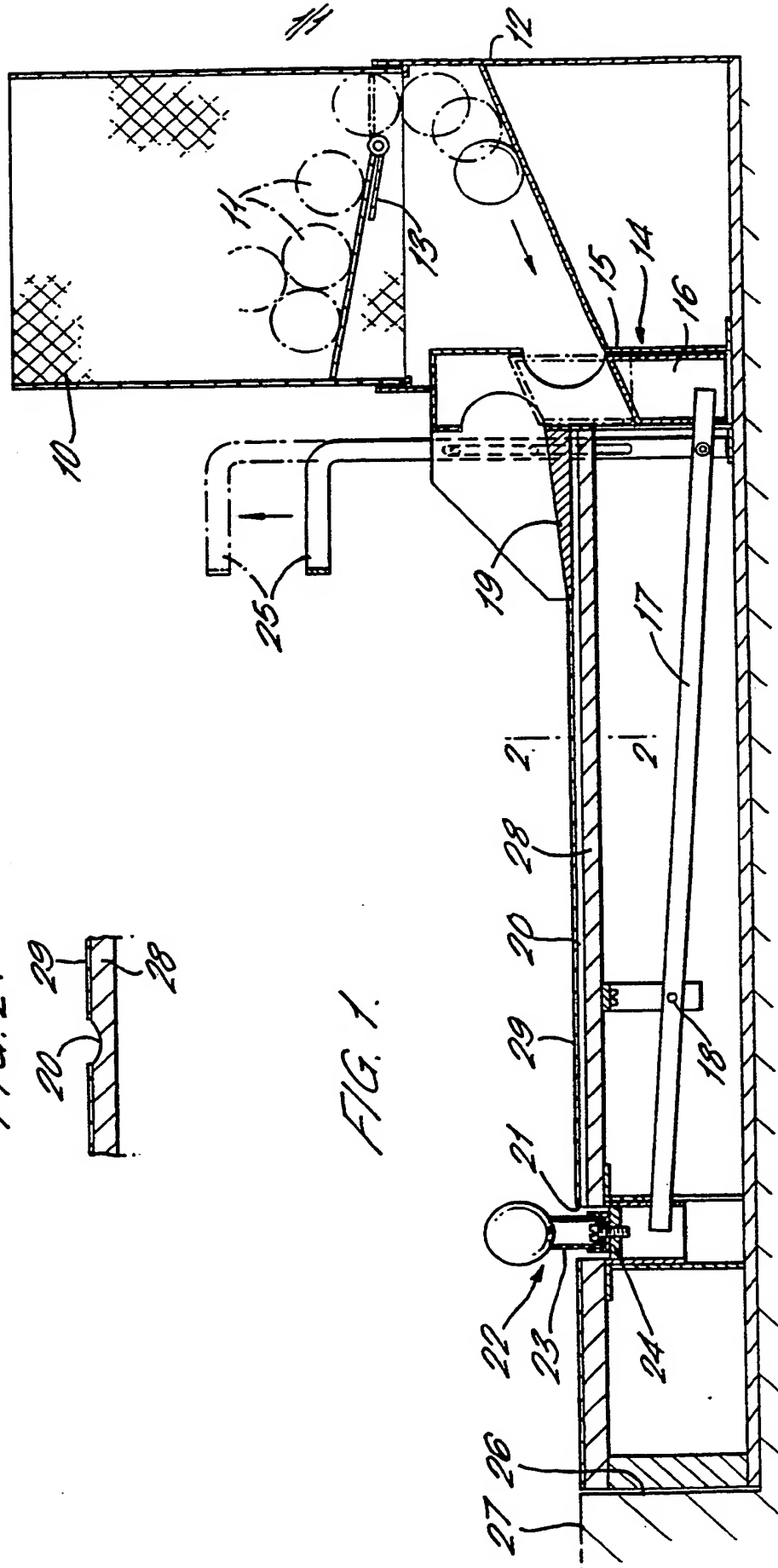
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(54) Golf apparatus

(57) The apparatus comprises a container (10) for golf balls (11) which are fed from a hopper (12) via a chute (15) one at a time by a plunger (16) operated by a lever (17) to a runway (19) from whence each ball travels along a track (20) to a hole (21) where it comes to rest. Return movement of the lever then raises a tube (23) to pick up and tee the ball up.



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GOLF APPARATUS

5           This invention relates to golf and provides  
apparatus comprising means for teeing up a golf ball  
and means for automatically feeding golf balls  
thereonto, said automatic feed means comprising means  
for dispensing golf balls one at a time from a  
10   resevoir of golf balls and means for delivering each  
said dispensed golf ball onto the teeing means.

          The automatic feed means may be actuated  
manually each time a fresh golf ball is to be teed up  
or an automatic actuation system may be provided.

15           The golf ball dispensing means may include a  
chute in which a plunger is movably arranged and the  
plunger may be arranged for reciprocal movement in the  
chute and be operated by a pivotally mounted lever.  
In such a case, the lever may be arranged to operate  
20   the plunger and the teeing means on respectively  
opposite sides of its pivotal axis.

          A delay mechanism may be provided for slowing  
down movement of the lever between operation of the  
plunger and the teeing means, eg in the form of a gas  
25   cylinder damper.

          Operation of the automatic feed means may be  
power assisted. The golf ball delivery means may  
include a track along which the golf balls travel, in  
which case the track may have a stopping point at  
30   which the golf balls come to rest, with the teeing  
means being arranged directly beneath said stopping  
point.

          There may be provided means for adjusting the  
height at which the teeing means tees up a golf ball.

35           The reservoir of golf balls may comprise a  
container removably mounted on a hopper, and the

container may have a trap door which is normally closed, but which opens when the container is mounted on the hopper.

5 The invention also provides a golf facility, eg practice net or driving range incorporating apparatus as defined herein.

By way of example, embodiments of the invention will now be described with reference to the accompanying drawings, in which:

10 Figure 1 is a sectional view of apparatus according to the invention, and

Figure 2 is a partial section through lines 2-2 of Figure 1.

The apparatus seen in Figure 1 comprises a wire  
15 basket 10 which contains golf balls 11. The wire basket 10 is removably mounted on a hopper 12 and has a trap door 13. The trap door 13 is normally closed but opens when the basket 10 is mounted on the hopper 12. The hopper 12 feeds the golf balls 11 to a  
20 dispensing means 14. The dispensing means 14 includes a chute 15 in which a plunger 16 is movably mounted. The plunger 16 is reciprocable in the chute 15 and operated by a lever 17 which is pivotally mounted about an axis 18. Golf balls 11 dispensed from the  
25 chute 15 travel down a runway 19 and along a track 20. Figure 2 shows that here the track 20 is in the form of a groove or recess in the deck 28 of the apparatus. The deck 28 is preferably covered with a layer of simulated turf 29. The track 20 has a  
30 stopping point (in this case a hole 21) at which the golf balls 11 come to rest. A teeing means 22 is arranged directly beneath the stopping point (ie, in the hole 21 in this case). The teeing means 22 comprises a tube 23 of resiliently deformable  
35 material, eg neoprene. The tube 23 is attached to a base block 24 which is guided for movement up and

down. The base block 24 is connected to the lever 17 and is thus reciprocable up and down by pivotal movement of the lever. The teeing means 22 and plunger 16 are arranged on respectively opposite sides of the pivotal axis 18 of the lever 17. The lever 17 is operated by means of a stirrup 25.

The operation of the apparatus is as follows: when a golfer wishes to tee up a golf ball 11, he lifts the stirrup 25 (eg by hooking it up with the head of his golf club). This causes the lever 17 to pivot and raise the plunger 16 which thus delivers a golf ball onto the runway 19. The golf ball 11 runs down the runway 19 and its momentum carries it along the track 20 until it comes to rest at the stopping point, hole 21. The teeing means 22 is at this stage below the level of the track 20, having been lowered there by the initial pivotal movement of the lever 17. Return pivotal movement of the lever 17 causes the teeing means 22 to rise up and pick up the golf ball 11 as it does so. The golf ball 11 is now teed up and ready to be hit and this position is seen in Figure 1. The return pivotal movement of the lever 17 has at the same time lowered the plunger 16, which charges the dispensing means 14 with another golf ball 11 in the chute 15.

There is preferably a delay mechanism in the apparatus for slowing down the return pivotal movement of the lever 17 so that the teeing means 22 is not raised too early to collect the golf ball 11. The delay mechanism may take the form of a gas cylinder damper.

The apparatus may be purely mechanically operated or may be power assisted or power driven.

The lever may be actuated by means other than the stirrup, eg by a foot operated pedal, or the apparatus may be actuated automatically rather than

manually. For example, a sensor may be arranged to detect the presence or absence of a golf ball on the teeing means and cause automatic operation of the dispensing means if the absence of a golf ball is detected.

There is preferably means to ensure proper feeding of the golf balls from the container, and this may involve the use of an agitator.

The apparatus is suitable for installation in any existing facility, eg practice net or driving range, and simply requires fitting into a trench to bring it level with the ground or surface on which the golfer stands. Alternatively, the apparatus may be built in integrally with such a facility.

It will be appreciated that for practising hitting "fairway" shots, ie without the golf ball being teed up, the tube 23 could be replaced by a solid plug (with a simulated turf surface) which is arranged to come up flush with the deck of the apparatus.

Where the tube 23 is used, there is preferably some means to vary the height at which the golf ball 11 is teed up. One way is simply to adjust the length of the tube 23. Another way, which avoids the need to alter the length of the tube 23, is to provide an adjustable stop for the base block 24 or lever 17 to enable the teeing means to be stopped at different levels.

CLAIMS

5           1.   Apparatus comprising means for teeing up a  
golf ball and means for automatically feeding golf  
balls thereonto, said automatic feed means comprising  
means for dispensing golf balls one at a time from a  
resevoir of golf balls and means for delivering each  
10 said dispensed golf ball onto the teeing means.

          2.   Apparatus as claimed in Claim 1 wherein  
the automatic feed means is actuated manually each  
time a fresh golf ball is to be teed up.

15           3.   Apparatus as claimed in Claim 1 or Claim 2  
wherein the golf ball dispensing means includes a  
chute in which a plunger is movably arranged.

20           4.   Apparatus as claimed in Claim 3 wherein  
the plunger is arranged for reciprocal movement in the  
chute and is operated by a pivotally mounted lever.

          5.   Apparatus as claimed in Claim 4 wherein  
25 said lever is arranged to operate said plunger and the  
teeing means on respectively opposite sides of its  
pivotal axis.

          6.   Apparatus as claimed in Claim 5 and  
30 including a delay mechanism for slowing down movement  
of the lever between operation of the plunger and the  
teeing means.

          7.   Apparatus as claimed in any preceding  
35 claim wherein operation of the automatic feed means is  
power assisted.

8. Apparatus as claimed in any preceding claim wherein the golf ball delivery means includes a track along which the golf balls travel.

5 9. Apparatus as claimed in Claim 8 wherein the track has a stopping point at which the golf balls come to rest and the teeing means is arranged directly beneath said stopping point.

10 10. Apparatus as claimed in any preceding claim and including means for adjusting the height at which the teeing means tees up a golf ball.

15 11. Apparatus as claimed in any preceding claim wherein said reservoir of golf balls comprises a container removably mounted on a hopper.

20 12. Apparatus as claimed in Claim 11 wherein said container has a trap door which is normally closed but which opens when the container is mounted on the hopper.

25 13. Apparatus substantially as herein described with reference to the accompanying drawings.

30 14. A golf practice net or driving range incorporating apparatus as claimed in any preceding claim.

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